

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT APPLICATION

5    Entitled :    A METHOD AND APPARATUS FOR DETECTING AND  
                 LOCATING NOISE SOURCES WHETHER CORRELATED OR  
                 NOT

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ABSTRACT OF THE DISCLOSURE

          The invention relates to a method of detecting and  
locating noise sources each emitting respective signals  $S_j$   
with  $j = 1$  to  $M$ , detection being provided by means of  
20    sound wave or vibration sensors each delivering a  
          respective time-varying electrical signal  $s_i$  with  $i$  in the  
range 1 to  $N$ . According to the invention, the method  
consists:

- in taking the time-varying electrical signals  
25    delivered by the sensors, each signal  $s_i(t)$  delivered by a  
sensor being the sum of the signals  $S_j$  emitted by the  
noise sources;
- in amplifying and filtering the time-varying  
electrical signals as taken;
- 30    · in digitizing the electrical signals;
- in calculating a functional; and
- in minimizing the functional relative to the  
vectors  $\mathbf{n}_j$  for  $j = 1$  to  $M$  so as to determine the  
directions vector  $\mathbf{n}_j$  of the noise sources.